

## On Rapport Uncertainty in the Sharing Economy – Extending the Categories of Uncertainty

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### Abstract

*Sharing Economy platforms enable a close physical interaction among strangers by mediating goods and services owned or provided by individuals. This close physical interaction is an inherent part of the service experience, is highly individual and thus can hardly be evaluated beforehand. This gives rise to a novel type of service uncertainty that we term as rapport uncertainty. Building on the hierarchical decomposition of service quality, we construct an uncertainty model that encompasses three uncertainty categories consumers face when sharing a resource: rapport, technical, and environment uncertainty. Our empirical study in a ride sharing context reveals that rapport uncertainty differs from other categories of uncertainty and significantly reduces the intention to transact with a service provider. Our findings illustrate how the concept of uncertainty must be extended to reflect the nature of shared service experiences. We suggest that owners of these platforms should actively manage this aspect through platform design.*

### 1. Introduction

“You have friends all over the world, you just haven't met them yet” [1]. This headline on the Couchsurfing site highlights the importance of social relationships for this network. Besides Couchsurfing, services like BlaBlaCar for ride sharing [2] or EatWith for meal sharing [3] have equally emphasized the benefits of social interaction and companionship when promoting their services.

These services constitute an emerging socio-economic system known as the Sharing Economy in which a shared consumption of resources takes place: whereas the provider of the shared asset engages in prosumption [4], consumers indulge in consumption. Sharing Economy platforms extend the scope of digital platforms by offering mediating services centered on physical assets [5], thereby leading to close physical interactions between the two parties [6]. This physical meeting of the actors could be problematic since each

participant may bring a separate script to and harbor distinct expectations of the transaction [8], thereby blurring the boundaries between social and commercial interests [7]. This in turn increases the potential for conflicts. For instance, in a ride sharing scenario, a passenger could opt to sleep or work during the ride, whereas the driver prefers to listen to music or to interact with the passengers.

On most Sharing Economy platforms the average rating for the resource provider is extremely high [9]. Consequently, conventional quality indicators like ratings and customer reviews are inadequate to explain the selection of a potential transaction partner. At the same time, the interpersonal element renders a general judgement of a “good service provider” difficult, as personal relationships can shape the evaluation of goods and services [10,11]. For this reason, Sharing Economy platforms typically offer social profile descriptions that not only allow consumers to choose their preferred service provider, but they also permit providers of the shared resource to select consumers before engaging in transactions [12]. Similar to experience goods, the *ex ante* evaluation of a service offer and its service provider is difficult [13]. This leads to a high degree of uncertainty on the consumer side. Besides functional uncertainties related to the technical and environment quality of the service, a non-functional uncertainty related to the rapport between consumer and service provider is getting more prominent in Sharing Economy services.

Although past studies have dealt with uncertainty related to the seller [e.g. 14,15,16,17] and the resource [e.g. 13,18,19,20,21], they are generally limited to product-based transactions. Conversely, prior research of rapport in commercial transactions is restricted to an *ex post* perspective and mostly linked with service quality. The effects of rapport uncertainty on consumers' decision making from an *ex ante* perspective (i.e., before engaging in a transaction) thus remains unclear.

To fill this gap, we extend the hierarchical concept of service quality [22,23] and develop a model by introducing rapport as a novel category of uncertainty unique to the Sharing Economy to investigate rapport

from an ex ante perspective. We aim to answer the following research question: *How can rapport uncertainty be theorized in the context of the Sharing Economy and how does rapport uncertainty affect the consumers' intention to engage in a transaction?*

In the following, we describe the relation between evaluation and uncertainty and provide the theoretical foundation for the conceptualization of rapport. Based on the hierarchical conceptualization of service quality [22,23], we derive three different types of uncertainties consumers face when engaging in a Sharing Economy transaction. We build upon these categories and develop our research model. By conducting a survey in a ride sharing context, we validate our model and show interrelationships among the different uncertainty categories and their influence on the intention to transact with a service provider. Our research paper concludes by summarizing and discussing the findings and providing practical implications for managers of Sharing Economy platforms.

## 2. Theoretical foundation

This section elaborates on the relationship between service evaluation and uncertainty and reviews extant literature on rapport. Furthermore, the three categories of uncertainty considered in our research model are derived and described.

### 2.1. Evaluation and uncertainty

Since uncertainty stems from partial information and subjective probabilities, it represents consumers' confidence in their evaluations [13]. It is related to vertical and horizontal quality differentiation [19].

In an online shopping context, service evaluation can be divided into two phases. According to Park et al. [24], pre-service evaluation denotes the decision making process leading up to a consumer's choice of a vendor before product purchase. Post-service evaluation, on the other hand, acts as an enriching and reinforcing role to justify the consumer's decision in terms of the vendor choice after purchase. In this sense, pre-service evaluation is often characterized by uncertainty, whereas post-service evaluation refers to service quality. Table 1 summarizes the relationship between uncertainty and service quality.

**Table 1. Service evaluation and uncertainty**

<b>Perspective</b>	Pre-service	Post-service
<b>Evaluation</b>	Uncertainty	Service quality
<b>Role</b>	Decision making	Decision justification
<b>Studies</b>	This study	[e.g. 23,25,26]

Pre-service evaluation and its corresponding uncertainty can be influenced or mitigated by the mediating platform, since the platform has no option to deal with the quality perceptions after the purchase. Therefore, our study links pre-service evaluation to uncertainty and investigates the decision making of the consumer. We use the hierarchical conceptualization of service quality (post-service) to distinguish among interaction quality, technical quality, and physical environment quality [22,23] as a basis for deriving three types of uncertainties (pre-service). We have opted for the concept of rapport to take into account the depth and richness of dyadic relationships that extends beyond interaction. Interaction quality will be subsumed under the theorization of rapport uncertainty mentioned in the next paragraphs.

### 2.2. Prior research on rapport

Scholars from multiple disciplines have investigated rapport ranging from diverse educational settings, roommate relationships, psychotherapist-client interactions, or business transactions [11]. Tickle-Degnen and Rosenthal [27] describe rapport as the "chemistry" among people. Gfeller et al. [28] and Carey [29] see rapport as a relationship characterized by satisfactory communication and mutual understanding. It can be seen as the connection between interactants marked by harmony, conformity, accord, and affinity [30]. Gremler and Gwinner [11] found an enjoyable interaction and a personal connection as two dimensions of rapport. In the same vein, we define rapport as the "customer's perception of having an enjoyable interaction with a service provider employee, characterized by a personal connection between the two interactants" [11:92]. Enjoyable interaction is seen as an affect-laden, cognitive evaluation of one's exchange with a service provider and personal connection is seen as a perceived bond between service provider and consumer [11].

The handful of studies investigating rapport in IS have focused on a functional level of rapport without investigating non-functional aspects like the enjoyment of interactions. In the context of service quality, studies equate rapport with the courtesy and individualized attention conveyed by a service representative [25,26]. Studies investigating virtual distributed teams [31] and the communication in systems design [32] consider rapport as harmony and affinity.

Across all disciplines, to the best of our knowledge every study investigates rapport from an ex-post perspective (after fulfillment of the service), whereas studies examining rapport from an ex-ante perspective (before fulfillment of the service) are nonexistent.

In the context of the Sharing Economy, rapport before service fulfillment is crucial due to the shared consumption of an asset. In contrast to traditional service encounters, the service provider in the Sharing Economy participates in the consumption process and shares the asset with the consumer. This in turn lends credence to the importance of rapport among actors.

Rapport is applicable across a variety of service interactions regardless of whether the consumer has repeated interactions with the same service provider [11]. Rapport can affect the evaluation of services [10]. However, the assessment of the quality is difficult, even after execution of the transaction.

### 2.3. Rapport uncertainty

On rating websites like Yelp, one is able to evaluate the overall performance of traditional service facilities like barbershops or restaurants, but not the individual performance of each hairdresser or waiter. This is because it is virtually impossible to evaluate *ex ante* the performance of an individual service provider, especially with regards to their social characteristics. The same challenge applies to Sharing Economy services where resources and time are shared with non-professional strangers. However, sharing platforms enable the performance evaluation of individual service providers and might be able to mitigate this uncertainty before executing the transaction by offering detailed descriptions of the social profile of each individual actor. The physical meeting of the actors also emphasizes the importance of rapport for these services. Therefore, we investigate technological means to assess rapport a priori that go beyond general rating mechanisms for business (such as Yelp).

Consistent with the theorization and post-service evaluation of rapport by Gremler and Gwinner [11], we derive rapport uncertainty by adapting the two dimensions of rapport mentioned above. Accordingly, rapport uncertainty is proposed to have two facets: interaction uncertainty and connection uncertainty.

First, since the consumer may be concerned to have an enjoyable interaction with the service provider during the service provision, interaction uncertainty refers to the consumer's uncertainty of having an enjoyable exchange with the service provider, for instance, the concern of the consumer to have conversations characterized by a high sense of humor or a feeling of "warmth" in a harmonious relationship.

Second, consumers may want to have an affiliation with service providers based on intimate ties like sharing the same hobby. The closeness and strength of the relationship developed between a service provider and a customer influence the perceived quality of a service [22]. Accordingly, connection uncertainty can

be regarded as the uncertainty of having a bond between consumer and service provider. This may include consumers' uncertainty of whether both parties possess mutual understanding and share the same value system.

From above, we define rapport uncertainty (RU) as the degree to which a consumer cannot assess whether there will be an enjoyable interaction with a service provider and a personal connection between the two interactants [adapted from 11].

### 2.4. Technical uncertainty

It is critical for consumers that the service is technically acceptable and leads to a desired outcome [33]. There is consensus in the literature that the technical quality of a service encounter drives consumer's perceptions of the service quality [23]. The technical quality involves the outcome of a service and the technical competence of its provider [22].

According to Grönroos [34] service outcome refers to the outcome of the service process. In other words, what the consumer receives as a consequence of his or her interaction with a service provider.

Conversely, expertise reflects the provider's competence, knowledge, qualification, skill, and ability of a service provider to adhere to high standards of service provision [22].

Adapting the technical quality to an *ex ante* perspective, we define technical uncertainty (TU) as the degree to which a consumer cannot assess the outcome of a service and its provider's technical competence to fulfill the transaction.

### 2.5. Environment uncertainty

Prior research [e.g. 35] have considered the influence of the physical service environment on customer service evaluations. Perceived physical environment quality thus encompasses atmospheric and tangible aspects of the service provision [22,23].

Atmosphere refers to intangible background characteristics of the service environment like the temperature, the smell, or the music, whereas tangible aspects refer to the design, the function, or the layout of the environment [22,23].

Accordingly, we define environment uncertainty (EU) as the degree to which a consumer cannot assess whether the atmospheric and the tangible environment of the service match the consumer's preferences.

## 3. Model development

This study focuses on Sharing Economy services where consumers and providers share a resource at the

same time. A prime example for these kinds of services can be observed in the ride sharing context.

The importance of social elements in the relationship between consumers and service providers has been noted in past studies [36]. Consumers perceiving high social benefits are more satisfied with a salesperson [37]. The nature of the relationship among the two actors affects the way service attributes are evaluated by the consumer [8] and a commercial friendship between consumer and service provider translates into positive word-of-mouth [38]. Personal relationships can influence the evaluation of goods and services [10,39]. We propose that this relationship applies also in an ex ante perspective.

According to Projection Bias Theory individuals tend to exaggerate how much their future taste will be like it is today. Loewenstein et al. [40] show that consumers tend to overvalue the satisfaction derived from a durable good when they are in a good mood (e.g., feelings of personal connection to a provider) and vice versa when they are in a bad mood (e.g., lack of connection to the provider).

We transfer this to a ride sharing context, where a consumer and a driver share the same values (e.g. a sustainable lifestyle). Due to the sharing of identical values the consumer could perceive a high personal connection to the service provider leading to low rapport uncertainty. It is likely that the consumer predicts that the driving style of the driver is sustainable and relatively slow and accordingly would fulfil the consumer's expectation on performance and the corresponding outcome of the transaction. This would lead to a reduced technical uncertainty.

People in relationships with a high level of rapport are more likely to take the perspective of their relationship partners and care about the reaction of their partners to their behavior [41,42]. Negotiating individuals who are high in rapport tend to be more likely to reach an agreement [43]. Jap et al. [44] found that opportunistic behavior of people is influenced by the degree of rapport. Therefore, we propose that the degree of rapport between consumer and service provider drives opportunistic behavior of the service provider. In situations where people do not have enough information about an exchange partner, people tend to use process information (e.g. social characteristics) as a substitute in the assessment of the trustworthiness of the exchange partner and the desirability of the exchange outcome [45]. Accordingly, we hypothesize:

*H1: Rapport uncertainty is associated with technical uncertainty.*

Dimoka et al. [13] uncovered that uncertainties related to a seller (e.g. lacking of trust, or opportunistic

behavior of the seller) affect uncertainties related to the product. Extending their work to a service context, we propose that uncertainty related to the resource provider influences perceived uncertainty related to the resource the service is provided on. If a consumer is uncertain whether the outcome of the service provision will be positive or has doubts on the ability of the service provider to provide the service, this could additionally influence the perception on the physical resource the service is provided on. Assuming a consumer (e.g. passenger) having doubts on the trustworthiness of a service provider (e.g. driver) and correspondingly on the outcome of the transaction. If this driver of a ride promises a spacious and comfortable car and the passenger has doubts on the trustworthiness of the driver this could also lead to doubts on the reliability of these statements and influence uncertainties on the space and design of the car. We thus hypothesize:

*H2: Technical uncertainty is associated with environment uncertainty.*

As articulated earlier, personal relationships can influence the evaluation of goods and services [10,39]. Therefore, a good interaction and a personal connection between the consumer and the service provider (e.g. due to sharing of common interests) could imply that consumer and service provider have the same preferences on the atmosphere and the design or the layout of the physical resource during the service provision.

Assuming a ride sharing scenario where both consumer and service provider of the ride like to listen to rock music. The affinity of being a rock music fan could lead to a personal connection among the both parties and correspondingly reduce rapport uncertainty. Additionally, this bond could lead to the assumption that the driver and passenger prefer listening to rock music during the ride which leads to a decreased atmosphere uncertainty and accordingly to a decreased environment uncertainty. Therefore, we hypothesize:

*H3: Rapport uncertainty is associated with environment uncertainty.*

Consumers tend to prefer certain rather than uncertain outcomes [46] and exhibit an uncertainty-adjusted willingness to pay for goods which varies according to the evaluations of uncertainty and the subjective assessment of the expected quality [e.g. 14,20,47,48]. If consumers have the possibility to select different vendors, uncertainty avoidance should lead consumers to select the vendor with the least perceived uncertainty [20]. Adapting this relationship to a service context, we propose that consumers engage in transactions where they perceive the least

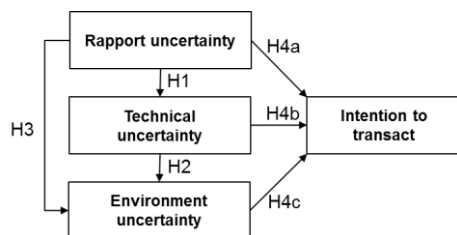
uncertainty. We postulate that rapport uncertainty, technical uncertainty, and environment uncertainty negatively influence the intention to engage a transaction and hypothesize:

*H4a: Rapport uncertainty is negatively associated with the intention to transact.*

*H4b: Technical uncertainty is negatively associated with the intention to transact.*

*H4c: Environment uncertainty is negatively associated with the intention to transact.*

The hypotheses and the research model are summarized in Figure 1.



**Figure 1. Research model**

## 4. Empirical study

Our empirical study consists of two stages. First, participants were shown a ride sharing website offering a ride for sharing including the price of the ride, departure date, pictures and description of the car and other ride details like smoking or eating allowed during the ride. The participants were told that the price and the time of departure fulfill their needs. Second, the participants were guided through the website and were asked to rate the degree of uncertainty related to the ride and the possibility to ride along.

### 4.1. Measurement of constructs

We adapted constructs from service quality measurement scales used in prior studies and adjusted them to match an ex ante perspective if necessary. The survey questions are statement-like items and were measured by a seven-point Likert scale ranging from *strongly disagree*=1 to *strongly agree*=7. We generally used four items per construct to adequately identify the construct and to assess its validity [49].

To measure the intention to transact with a service provider, we used items from Sia et al. [50]. Items on the different uncertainties were adapted to an ex ante perspective from existing service quality measurement items. The items on the three types of uncertainty were adapted from Gremler and Gwinner [11] and Dagger et al. [22] and adjusted to an ex-ante perspective. The

appendix summarizes the list of measurement items employed in our survey.

### 4.2. Data collection

We conducted an online survey using Amazon's Mechanical Turk workers to estimate our research model and to test our hypotheses. Mechanical Turk provides a good data source for theory testing and refinement [51] and is a well-established platform for behavioral research [52]. The quality and high reliability of data and results retrieved from Mechanical Turk workers is demonstrated by a variety of studies [51,52,53].

Prior to the main survey, we conducted a pre-test with 20 testers to identify ambiguities and mistakes in the questionnaire. After slightly adjusting the wording and refining some items, the main survey took place in June 2017. A total of 137 participants completed the questionnaire. To assure a high quality of our data set, we applied a data cleaning process and deleted answers with very low response time and respondents who failed to answer a control question [37]. 131 remaining responses were utilized for this study.

### 4.3. Measurement model analysis

Before estimating the structural model, we conducted an exploratory factor analysis (EFA) of all uncertainty measures with IBM SPSS Statistics 24, using the principle component analysis and varimax rotation. As expected, we obtained three factors with eigenvalues greater than one. A total of 78.48% of the variance can be explained by these three factors. The results of the EFA depicted in Table 2 indicate the three factors relate to RU, TU, and EU and can be treated as three distinct uncertainty categories.

**Table 2. Results of the EFA**

Item	RU	TU	EU
RU_01	<b>0.803</b>	0.144	0.099
RU_02	<b>0.822</b>	0.284	0.210
RU_03	<b>0.822</b>	0.188	0.300
RU_04	<b>0.860</b>	0.203	0.207
TU_01	0.171	<b>0.747</b>	0.296
TU_02	0.220	<b>0.791</b>	0.276
TU_03	0.207	<b>0.845</b>	0.254
TU_04	0.241	<b>0.798</b>	0.247
EU_01	0.393	0.292	<b>0.759</b>
EU_02	0.424	0.223	<b>0.753</b>
EU_03	0.129	0.326	<b>0.862</b>
EU_04	0.118	0.357	<b>0.831</b>

We then evaluated the model using these 12 items (four for each uncertainty category) and the measures for behavioral intention in SmartPLS 3. We checked the factor loadings (all above 0.7), reliability of items (Cronbach's  $\alpha$  exceeds 0.7 for all constructs), and average variance extracted (AVE; above 0.5 for all constructs) [49,54].

In order to evaluate discriminant validity, we controlled if the items load more strongly on their corresponding construct than on other constructs. This criterion was fulfilled and shows that all constructs share more variance with their indicators than with other latent constructs. Statistics on the latent constructs are given in Table 3.

**Table 3. Statistics on the latent constructs**

Items	CFA loadings	Mean	Std. Dev.	Cron. $\alpha$	AVE
RU_01	0.795	3.83	1.56	0.903	0.776
RU_02	0.903	4.18	1.56		
RU_03	0.904	4.09	1.57		
RU_04	0.916	4.28	1.56		
TU_01	0.810	2.89	1.33	0.854	0.695
TU_02	0.830	2.98	1.57		
TU_03	0.863	2.94	1.89		
TU_04	0.832	2.97	1.90		
EU_01	0.918	3.64	1.71	0.921	0.809
EU_02	0.892	3.85	1.67		
EU_03	0.904	3.19	1.64		
EU_04	0.884	3.14	1.57		

Additionally, we tested the fulfillment of the Fornell-Larcker criterion which suggests that the square root of the AVE for each variable should be greater than its correlation with any other construct in the model [55]. This criterion was fulfilled by all latent variables. The correlation between all latent constructs and AVE are given in Table 4. Based on the results of the CFA, we argue that the developed measurement instrument fulfills the requirements of convergent and discriminant validity.

**Table 4. Correlation between latent constructs and AVE**

	AVE	EU	RU	TU
EU	0.809	<b>0.899</b>		
RU	0.776	0.568	<b>0.881</b>	
TU	0.695	0.640	0.478	<b>0.834</b>

Note: The square root of the AVE for each construct is shown in bold font.

#### 4.4. Structural model analysis

We assessed our research model using partial least squares (PLS) structural equation model (SEM) with

SmartPLS 3. The significance of each path between the constructs is analyzed by a one-tailed t-test with bootstrapping technique (5000 subsamples) at a significance level of 5 percent. All constructs were modeled as reflective.

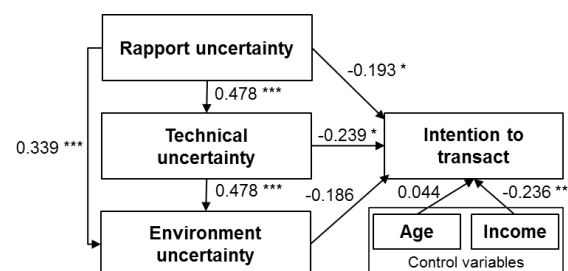
The path analysis confirms that the perceived uncertainties influence consumer's intention to transact with a certain service provider. The results show that except of H4c every hypothesis has a statistically significant effect.

**Table 5. Summary of the hypothesis tests**

Hyp.	Path	Path coeff.	T value	Supp.
H1	RU $\rightarrow$ TU	0.478	6.724	Yes
H2	TU $\rightarrow$ EU	0.478	5.514	Yes
H3	RU $\rightarrow$ EU	0.339	4.028	Yes
H4a	RU $\rightarrow$ INT	-0.193	1.669	Yes
H4b	TU $\rightarrow$ INT	-0.239	1.945	Yes
H4c	EU $\rightarrow$ INT	-0.186	1.636	No

In line with our anticipation, perceived rapport uncertainty exerts a negative effect on intention to transact (H4a:  $\beta=-0.193$ ;  $p<0.05$ ), but positively influences perceived technical uncertainty (H1:  $\beta=0.478$ ;  $p<0.001$ ) and perceived environment uncertainty (H3:  $\beta=0.339$ ;  $p<0.001$ ). Additionally, perceived technical uncertainty has a negative impact on intention to transact (H4b:  $\beta=-0.239$ ;  $p<0.05$ ) and a positive influence on perceived environment uncertainty (H2:  $\beta=0.478$ ;  $p<0.001$ ). The influence of perceived environment uncertainty on intention to transact (H4c:  $\beta=-0.186$ ;  $p=0.052$ ) was not statically significant. We controlled for age and income of the participants. Income has a statistically negative effect on intention to transact ( $\beta=-0.236$ ;  $p<0.01$ ), whereas age ( $\beta=-0.044$ ;  $p=0.284$ ) seems not to have significant effects on intention to transact.

The results of the structural model analysis are depicted in Figure 2 and summarized in Table 5.



Note: \*  $p<0.05$ , \*\*  $p<0.01$ , \*\*\*  $p<0.001$

**Figure 2. PLS estimation results**

## 5. Discussion

The objectives of this study were to conceptualize uncertainty categories for consumers of Sharing Economy transactions and to investigate the influence of these on one's intention to transact with a certain service provider. We investigate Sharing Economy services where the consumer and the service provider share a resource concurrently. Ride sharing, as a prime example of such services, serves as the setting for our empirical investigation. Our results reveal that rapport uncertainty and technical uncertainty significantly influence the intention to transact. However, we didn't find significant effects for the environment uncertainty.

We show that, besides functional concerns related to the outcome of a transaction and characteristics of the environment, consumers face non-functional concerns related to the relationship among consumers and service providers. Of the three uncertainty categories, technical uncertainty appears to have the strongest impact on intention to transact. People using Sharing Economy services (e.g. ride sharing) primarily want to reach their goals (e.g. to come from A to B) in a reliable manner. Since the main motivations for using Sharing Economy services are derived from economic rationality, followed by sociability and sustainability reasons [e.g. 56,57,58], this high influence is not surprising. Nevertheless, concerns related to the relationship of consumer and service provider seem to be important. Surprisingly, we could not detect a significant influence of environment uncertainty on the intention to transact. A plausible explanation could be that ambient factors of the environment (e.g. temperature or smell) are not usually noticed by consumers except in extreme conditions [59]. Therefore, consumers potentially perceive the environment to have a minimum standard and, in general, are not concerned with the ambient conditions of the physical resource.

This study aims at contributing to research in two ways: First, we adapt the hierarchical concept of service quality [22,23] to an ex ante perspective and link it to uncertainty. The derived uncertainty framework offers a fruitful avenue for structuring and delimiting future research on user behavior in services and, in particular, for those in the Sharing Economy. Second, we expand on contemporary knowledge of existing uncertainty categories from a more functional view to a non-functional perspective. To the best of our knowledge, this study is the first that investigate rapport from an ex ante standpoint and conceptualize rapport uncertainty as an important predictor for consumers' intention to transact with service providers.

Uncertainties are the main drivers behind consumers' reluctance to engage in online transactions

[16]. Our study reveals three uncertainty types consumers are faced with in the Sharing Economy, in particular to date unconsidered uncertainties related to the relation of the involved actors. Managers of these organizations could harness our findings to increase consumer's intention to transact with a certain service provider by developing platform mechanisms to mitigate these uncertainty categories. Existing platform mechanisms like feedback ratings [e.g. 14,15], customer reviews [e.g. 18,60], third-party assurances [e.g. 17,61] could help to mitigate the technical and environment uncertainty. However, they are not suited to mitigate rapport uncertainty, since rapport uncertainty is highly subjective and differs from actor to actor. For this reason, Sharing Economy companies need to develop new platform mechanisms that cater to the rapport uncertainty, for instance, by highlighting interests, hobbies, political stance or other values of the involved actors.

Yet, we need to acknowledge certain limitations to our study. First, we focus on Sharing Economy organizations where the consumer and the provider of the resource share a resource at the same time. In particular, we focus on ride sharing as a prime example for these services. It could be interesting to validate our model in a different context like accommodation sharing. Second, we measured self-reported consumer intentions instead of actual behavior. However, according to the Theory of Planned Behavior [62] behavioral intention should culminate in actual behavior – but this relationship would be ideally tested in a field experiment. Future studies could extend our findings on the importance of rapport uncertainty by investigating mitigation mechanisms for this novel uncertainty category.

## 6. Conclusion

Our study advances rapport uncertainty as a novel category of uncertainty in the Sharing Economy. We distinguish among three different types of uncertainties and test their importance in a ride sharing setting. Our results attest to the criticality of non-functional uncertainty aspects concerning the interaction and connection between a consumer and a service provider – besides well-established uncertainties referring to the outcome of the transaction or the expertise of the service provider. Particularly, our results highlight that consumers are concerned about the prospects of the relationship with a service provider when forming their decisions on whether or not to engage in a sharing economy transactions. This expanded theorization of uncertainty in the Sharing Economy opens avenues for further investigations on shared consumption and platform design.

## 7. References

- [1] Couchsurfing, "How It Works | Couchsurfing." Available at: <http://www.couchsurfing.com/about/how-it-works/>, accessed on April 4, 2017.
- [2] BlaBlaCar, "Share your journey with BlaBlaCar - Trusted carpooling." Available at: <https://www.blablacar.com>, accessed on April 4, 2017.
- [3] EatWith, "EatWith: The future of dining." Available at: <https://www.eatwith.com/>, accessed on April 4, 2017.
- [4] D. Bajde, M. Kos Koklic, and J. Bajde, "Back to consumption and production? Prosumers negotiating the WMG lockdown on YouTube." *Journal of Consumer Behaviour*, vol. 14, no. 5, 2015, pp. 297–306.
- [5] I. Constantiou, B. Eaton, and V.K. Tuunainen, "The Evolution of a Sharing Platform into a Sustainable Business." *2016 49th Hawaii International Conference on System Sciences (HICSS)*, Koloa, HI, USA, 2016.
- [6] P. Kamal and J. Chen, "Trust in Sharing Economy." *PACIS 2016 Proceedings*, Chiayi, Taiwan, 2016.
- [7] D. Scaraboto, "Selling, Sharing, and Everything In Between: The Hybrid Economies of Collaborative Networks." *Journal of Consumer Research*, vol. 42, no. 1, 2015, pp. 152–176.
- [8] C. Goodwin and D.D. Gremler, "Friendship over the counter: how social aspects of service encounters influence consumer service loyalty." *Advances in services marketing and management*, vol. 5, no. 1, 1996, pp. 247–282.
- [9] J. Coen, "Higher than the average rating? 95% of Airbnb listings rated 4.5 to 5 stars." Mashable. Available at: <http://mashable.com/2015/02/25/airbnb-reviews-above-average/>, accessed on June 14, 2017.
- [10] M.J. Bitner, B.H. Booms, and M.S. Tetreault, "The Service Encounter: Diagnosing Favorable and Unfavorable Incidents." *Journal of Marketing*, vol. 54, no. 1, 1990, pp. 71–84.
- [11] D.D. Gremler and K.P. Gwinner, "Customer-Employee Rapport in Service Relationships." *Journal of Service Research*, vol. 3, no. 1, 2000, pp. 82–104.
- [12] L. Karlsson, A. Kemperman, and S. Dolnicar, "May I sleep in your bed? Getting permission to book." *Annals of Tourism Research*, vol. 62, no. 1, 2017, pp. 1–12.
- [13] A. Dimoka, Y. Hong, and P.A. Pavlou, "On Product Uncertainty in Online Markets: Theory and Evidence." *MIS Quarterly*, vol. 36, no. 2, 2012, pp. 395–A15.
- [14] S. Ba and P.A. Pavlou, "Evidence of the Effect of Trust Building Technology in Electronic Markets: Price Premiums and Buyer Behavior." *MIS Quarterly*, vol. 26, no. 3, 2002, pp. 243–268.
- [15] C. Dellarocas, "The Digitization of Word of Mouth: Promise and Challenges of Online Feedback Mechanisms." *Management Science*, vol. 49, no. 10, 2003, pp. 1407–1424.
- [16] P. Pavlou, H. Liang, and Y. Xue, "Understanding and Mitigating Uncertainty in Online Exchange Relationships: A Principal-Agent Perspective." *Management Information Systems Quarterly*, vol. 31, no. 1, 2007.
- [17] P.A. Pavlou and D. Gefen, "Building Effective Online Marketplaces with Institution-Based Trust." *Information Systems Research*, vol. 15, no. 1, 2004, pp. 37–59.
- [18] Y. (Kevin) Hong and P.A. Pavlou, "Product Fit Uncertainty in Online Markets: Nature, Effects, and Antecedents." *Information Systems Research*, vol. 25, no. 2, 2014, pp. 328–344.
- [19] Y. Kim and R. Krishnan, "On Product-Level Uncertainty and Online Purchase Behavior: An Empirical Analysis." *Management Science*, vol. 61, no. 10, 2015, pp. 2449–2467.
- [20] C. Matt and T. Hess, "Product fit uncertainty and its effects on vendor choice: an experimental study." *Electronic Markets*, vol. 26, no. 1, 2016, pp. 83–93.
- [21] E. Overby and S. Jap, "Electronic and Physical Market Channels: A Multiyear Investigation in a Market for Products of Uncertain Quality." *Management Science*, vol. 55, no. 6, 2009, pp. 940–957.
- [22] T.S. Dagger, J.C. Sweeney, and L.W. Johnson, "A Hierarchical Model of Health Service Quality: Scale Development and Investigation of an Integrated Model." *Journal of Service Research*, vol. 10, no. 2, 2007, pp. 123–142.
- [23] M.K. Brady and J.J. Cronin, "Some New Thoughts on Conceptualizing Perceived Service Quality: A Hierarchical Approach." *Journal of Marketing*, vol. 65, no. 3, 2001, pp. 34–49.
- [24] I. Park, J. Cho, and H.R. Rao, "The Dynamics of Pre- and Post-purchase Service and Consumer Evaluation of Online Retailers: A Comparative Analysis of Dissonance and Disconfirmation Models." *Decision Sciences*, vol. 46, no. 6, 2015, pp. 1109–1140.
- [25] A. Benlian, M. Koufaris, and T. Hess, "Service Quality in Software-as-a-Service: Developing the SaaS-Qual Measure and Examining Its Role in Usage Continuance." *Journal of Management Information Systems*, vol. 28, no. 3, 2011, pp. 85–126.



- [26] W.J. Kettinger and C.C. Lee, "Zones of Tolerance: Alternative Scales for Measuring Information Systems Service Quality." *MIS Quarterly*, vol. 29, no. 4, 2005, pp. 607–623.
- [27] L. Tickle-Degnen and R. Rosenthal, "The Nature of Rapport and Its Nonverbal Correlates." *Psychological Inquiry*, vol. 1, no. 4, 1990, pp. 285–293.
- [28] J.D. Gfeller, S.J. Lynn, and W.E. Pribble, "Enhancing hypnotic susceptibility: Interpersonal and rapport factors." *Journal of Personality and Social Psychology*, vol. 52, no. 3, 1987, pp. 586.
- [29] J.C. [And O. Carey, "Development of a Short Form of the Roommate Rapport Scale." *Measurement and Evaluation in Counseling and Development*, vol. 20, no. 4, 1988, pp. 175–80.
- [30] F.J. Bernieri, J.S. Gillis, J.M. Davis, and J.E. Grahe, "Dyad rapport and the accuracy of its judgment across situations: A lens model analysis." *Journal of Personality and Social Psychology*, vol. 71, no. 1, 1996, pp. 110–129.
- [31] J. Kotlarsky and I. Oshri, "Social ties, knowledge sharing and successful collaboration in globally distributed system development projects." *European Journal of Information Systems; Basingstoke*, vol. 14, no. 1, 2005, pp. 37.
- [32] M. Tan, "Establishing Mutual Understanding in Systems Design: An Empirical Study." *Journal of Management Information Systems*, vol. 10, no. 4, 1994, pp. 159–182.
- [33] C. Grönroos, "An Applied Service Marketing Theory." *European Journal of Marketing*, vol. 16, no. 7, 1982, pp. 30–41.
- [34] C. Grönroos, "A Service Quality Model and its Marketing Implications." *European Journal of Marketing*, vol. 18, no. 4, 1984, pp. 36–44.
- [35] M.J. Bitner, "Evaluating Service Encounters: The Effects of Physical Surroundings and Employee Responses." *Journal of Marketing*, vol. 54, no. 2, 1990, pp. 69–82.
- [36] K.P. Gwinner, D.D. Gremler, and M.J. Bitner, "Relational Benefits in Services Industries: The Customer's Perspective." *Journal of the Academy of Marketing Science*, vol. 26, no. 2, 1998, pp. 101–114.
- [37] K.E. Reynolds and S.E. Beatty, "Customer benefits and company consequences of customer-salesperson relationships in retailing." *Journal of Retailing*, vol. 75, no. 1, 1999, pp. 11–32.
- [38] L.L. Price and E.J. Arnould, "Commercial Friendships: Service Provider-Client Relationships in Context." *Journal of Marketing*, vol. 63, no. 4, 1999, pp. 38–56.
- [39] A. Parasuraman, V.A. Zeithaml, and L.L. Berry, "A Conceptual Model of Service Quality and Its Implications for Future Research." *Journal of Marketing*, vol. 49, no. 4, 1985, pp. 41–50.
- [40] G. Loewenstein, T. O'Donoghue, and M. Rabin, "Projection Bias in Predicting Future Utility." *The Quarterly Journal of Economics*, vol. 118, no. 4, 2003, pp. 1209–1248.
- [41] J.E. Dutton, M.C. Worline, P.J. Frost, and J. Lilius, "Explaining Compassion Organizing." *Administrative Science Quarterly*, vol. 51, no. 1, 2006, pp. 59–96.
- [42] J. Fitness, "Anger in the Workplace: An Emotion Script Approach to Anger Episodes between Workers and Their Superiors, Co-Workers and Subordinates." *Journal of Organizational Behavior*, vol. 21, no. 2, 2000, pp. 147–162.
- [43] S. Jap, D.C. Robertson, and R. Hamilton, "The Dark Side of Rapport: Agent Misbehavior Face-to-Face and Online." *Management Science*, vol. 57, no. 9, 2011, pp. 1610–1622.
- [44] S.D. Jap, D.C. Robertson, A. Rindfleisch, and R. Hamilton, "Low-stakes opportunism." *Journal of Marketing Research*, vol. 50, no. 2, 2013, pp. 216–227.
- [45] M.K. Hui, X. Zhao, X. Fan, K. Au, and [Dawn Iacobucci served as editor and John Deighton served as associate editor for this article.], "When Does the Service Process Matter? A Test of Two Competing Theories." *Journal of Consumer Research*, vol. 31, no. 2, 2004, pp. 465–475.
- [46] C.R. Fox and A. Tversky, "Ambiguity Aversion and Comparative Ignorance." *The Quarterly Journal of Economics*, vol. 110, no. 3, 1995, pp. 585–603.
- [47] D. Kim and I. Benbasat, "Trust-Assuring Arguments in B2C E-commerce: Impact of Content, Source, and Price on Trust." *Journal of Management Information Systems*, vol. 26, no. 3, 2009, pp. 175–206.
- [48] Z. Lee and S. Gosain, "A longitudinal price comparison for music CDs in electronic and brick-and-mortar markets: Pricing strategies in emergent electronic commerce." *Journal of Business Strategies; Huntsville*, vol. 19, no. 1, 2002, pp. 55–71.
- [49] Hair, J.F., W.C. Black, B.J. Babin, R.E. Anderson, *Multivariate data analysis*. Pearson, Harlow, 2014.
- [50] C.L. Sia, K.H. Lim, K. Leung, M.K.O. Lee, W.W. Huang, and I. Benbasat, "Web Strategies to Promote Internet Shopping: Is Cultural-Customization Needed?." *MIS Quarterly*, vol. 33, no. 3, 2009, pp. 491–512.
- [51] Z.R. Steelman, B.I. Hammer, and M. Limayem, "Data Collection in the Digital Age: Innovative Alternatives to

Student Samples.” *Mis Quarterly*, vol. 38, no. 2, 2014, pp. 355–378.

[52] T.S. Behrend, D.J. Sharek, A.W. Meade, and E.N. Wiebe, “The viability of crowdsourcing for survey research.” *Behavior Research Methods*, vol. 43, no. 3, 2011, pp. 800.

[53] M. Buhrmester, T. Kwang, and S.D. Gosling, “Amazon’s Mechanical Turk: A New Source of Inexpensive, Yet High-Quality, Data?” *Perspectives on Psychological Science*, vol. 6, no. 1, 2011, pp. 3–5.

[54] S.B. MacKenzie, P.M. Podsakoff, and N.P. Podsakoff, “Construct Measurement and Validation Procedures in MIS and Behavioral Research: Integrating New and Existing Techniques.” *MIS Quarterly*, vol. 35, no. 2, 2011, pp. 293–334.

[55] C. Fornell and D.F. Larcker, “Evaluating Structural Equation Models with Unobservable Variables and Measurement Error.” *Journal of Marketing Research*, vol. 18, no. 1, 1981, pp. 39–50.

[56] E. Gullstrand Edbring, M. Lehner, and O. Mont, “Exploring consumer attitudes to alternative models of consumption: motivations and barriers.” *Journal of Cleaner Production*, vol. 123, no. 1, 2015, pp. 5–15.

[57] J. Hamari, M. Sjöklint, and A. Ukkonen, “The sharing economy: Why people participate in collaborative consumption.” *Journal of the Association for Information Science and Technology*, vol. 67, no. 9, 2015, pp. 2047–2059.

[58] I.P. Tussyadiah, “An Exploratory Study on Drivers and Deterrents of Collaborative Consumption in Travel.” In I. Tussyadiah and A. Inversini (eds.) *Information and Communication Technologies in Tourism 2015*. Springer International Publishing, Cham, 2015, pp. 817–830, 2015.

[59] S.K. Koernig, “E-scapes: The electronic physical environment and service tangibility.” *Psychology and Marketing*, vol. 20, no. 2, 2003, pp. 151–167.

[60] L. Zhu, I. Benbasat, and Zhenhui Jiang, “Let’s Shop Online Together: An Empirical Investigation of Collaborative Online Shopping Support.” *Information Systems Research*, vol. 21, no. 4, 2010, pp. 872–891.

[61] P.A. Pavlou and D. Gefen, “Psychological Contract Violation in Online Marketplaces: Antecedents, Consequences, and Moderating Role.” *Information Systems Research*, vol. 16, no. 4, 2005, pp. 372–399.

[62] I. Ajzen, “The Theory of Planned Behavior.” *Organizational Behavior and Human Decision Processes*, vol. 50, no. 2, 1991, pp. 179–211.

## Appendix

Uncertainty category and associated measurement items	Adapted from
<u>Rapport uncertainty</u>	
I am certain that the interaction with this driver will fit my preferences. (reversed)	[11]
I am uncertain whether the level of interaction with this driver will fit my preferences.	[11]
I am uncertain whether the relationship with this driver will fit my preferences.	[11]
I am uncertain whether the connection between this driver and myself will fit my preferences.	[11]
<u>Environment uncertainty</u>	
I am uncertain whether the "feel" (e.g. temperature) in the car will fit my preferences.	[22]
I am uncertain whether the background characteristics (e.g. background music or smell) in the car will fit my preferences.	[22]
I am uncertain whether the design of the car will fit my preferences.	[22]
I am uncertain whether the interior of the car will fit my preferences.	[22]
<u>Technical uncertainty</u>	
I am doubtful that using this driver will lead to the promised outcomes.	[22]
I am uncertain whether I will reach my goals with this driver (e.g. to come from A to B).	[22]
I am uncertain whether this driver has the ability to provide the service.	[22]
I am uncertain whether this driver has the qualification to provide the service.	[22]
<u>Intention to transact</u>	
I am considering engaging this ride.	[50]
I would seriously contemplate accept this ride.	[50]
It is likely that I am going to share this ride.	[50]
I am likely to engage this ride in the near future.	[50]